



# Balanced Scorecards: From Golf to Business

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*Metrics are all around us and we use them every day – even if we don't realize it. Golf, that frustrating game that we love to play, is used as an analogy to help better relate to the concepts and values of a Balance Scorecard; or, if you understand Balanced Scorecards, then to golf! Any metric is fine by itself but can become much more meaningful and useful when combined with others. Learn why a Balanced Scorecard is an appropriate way of reporting on a collection of metrics. The successful implementation and application of scorecards enables the use of appropriate metrics to facilitate understanding, planning, and communications.*

Winston Churchill once noted, “Golf is a game whose aim is to hit a very small ball into an even smaller hole, with weapons singularly ill-designed for the purpose [1].”

Given that, you would wonder why anyone would want to play such a game. Yet, there is an attraction to golf for many people, including me. And, not only do we play the game, but we also do the following:

- Keep our score and compare it to a target known as par.
- Keep track of our scores and establish a personal benchmark known as a handicap.
- Compare our new scores to the benchmark and adjust it when necessary.
- Analyze what we did right.
- Analyze what we could do to improve.
- Like to talk about it ... usually!
- Do benchmark studies when we compare our scores and handicaps with others and categorize ourselves in groupings and rankings.
- Chart our progress as well as how we are doing compared to others.
- Create sub-measures such as putts per round, sand saves, driving accuracy, and driving distance to help us understand our strengths and weaknesses and to identify and prioritize where we need to improve.

If we are really good, we can take our statistics and records to businesses to solicit them as sponsors, because they will want to support us and be associated with us when we go on *The Tour*.

And, if measuring ourselves is not enough, the golf equipment manufacturers have done a lot of measurements on their equipment. They have applied their goals and targets to research and development to create the technical advances in today's equipment that golfers enjoy and benefit from. In turn, the manufacturer advertises how successful players have been using their equipment.

## Before the Balanced Scorecard

More than 25 years ago, I wanted to get serious about improving my golf game. Basically, I did what many have done. I talked with my buddies and tried to figure out what I should do.

I found that I needed to understand where I was losing strokes. How many putts was I taking on each green? How many

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penalty strokes was I taking, and why was I taking them? Was I saving or wasting shots around the greens and from the bunkers?

I had to pay attention to what I was doing when I played. I made mental notes and compared the results from game to game. I soon learned that the strategy I needed was not on any one specific thing but it needed to be several things together. I now needed to determine how I would go about improving the various parts of my game. I started with the areas I perceived to be the worst and tried to focus on each of them. Unfortunately, perception is not always a great way to go. Neither is trying to work on several different areas at the same time – at least without a strategy.

Fortunately, I usually played with the same guys and they were able to help me understand where I needed to improve. Having somewhat analyzed my past performances, I now needed to determine what I was going to do to improve these areas of my game. Especially if I wanted to beat my friends!

Unfortunately, I was not in a position to significantly increase my golf expenses. So, the option of taking lessons could not be considered. I did subscribe to a golf magazine whose format and content I liked. I was also able to get some tips from my golf buddies as we each knew some different things about the game. One of them was a fairly accomplished golfer, and I was able to get a lot of good tips from him.

Next, I needed to practice what I was learning. This involved some work at the driving range and trying some things as I played. I figured that I would mess up every now and then anyway, so it would not matter much if I messed up trying something new. (Note: I do not recommend taking this approach at work!)

Ultimately, I did improve. However, it was a lot of trial and error based on my perceptions of what I was actually experiencing and doing as I played each game.

Like Churchill's thoughts on golf clubs being *ill-designed tools*, the tools and processes I used were ill-designed. I wish there had been a tool that I could have used. Taking a strategic approach to tracking the data and reporting it would have made perfect sense.

What about the tools we use in our work? Are they appropriately designed for use in achieving the desired results?

## The Balanced Scorecard - A Useful Tool

According to BetterManagement.com:

A Scorecard is essentially a carefully selected set of measures derived from an organization's strategy. It's a tool for leaders to communicate to

employees and external stakeholders the outcomes and performance drivers by which the organization will achieve its strategic objectives. Therefore, the Scorecard provides the link that translates strategy into action across the enterprise, aligning long-term strategy with coordinated, cohesive business activities. [2]

According to *IT Management*,

The balanced scorecard approach was developed by Dr. David Norton and Dr. Robert Kaplan of Harvard University around 1990. Under this approach, conventional financial measures are augmented by additional measures that report on the learning and growth perspective, and the financial perspective. However, because companies and products vary, one of the challenges of using the balanced scorecard approach is selecting the appropriate metrics for each of the four segments. [3]

The Balanced Scorecard contains four segments: financial perspective, internal business process perspective, customer perspective, and innovation and learning perspective. The *financial perspective* contains the traditional financial measures. Its underlying mission is to represent positive

financial contributions by the division to achieving our clients' business goals. Such measures as the average cost to produce a unit of product or process can be used to determine the relative value of the contributions by the division or organization.

The *internal business process segment perspective* contains measures of how the internal processes are performing. The mission is to deliver timely and effective services. We need to know what services and processes, internal to our division, we must excel at to satisfy our customers.

The *customer perspective* contains measures pertaining to things that concern the customer. The underlying mission is to represent how the division is doing in areas that directly affect the clients. Client satisfaction surveys and ratings supporting responses to client queries and problems can be effective in demonstrating customer support.

The *innovation and learning perspective* measures the learning and growth of the area. The mission is to develop the internal capabilities to learn, innovate, and exploit future opportunities. Success in this area means we have developed the ability to change and improve, enabling us to better support the customer.

In summary, there are four segments of the Balanced Scorecard, each consisting of a collection of measures. These measures, or metrics, are statistics that we can collect, report, and use to review, evaluate, and

determine appropriate action(s).

When used properly, we make metrics a tool and not the weapon that many have come to fear. Let me demonstrate the use of metrics in a Balanced Scorecard using my golf improvement experience.

## Improvement Through Metrics

I wanted to improve my golf scores. I was not happy with what could have been considered my *average score* metric when I started. However, saying that I wanted to improve my score and actually doing it were two different things.

I needed a strategy. I needed to consider several different things as part of my strategy. The sample Balanced Scorecard in Table 1 shows several of the areas mentioned earlier listed as specific measures in the four different segments. It sure would have been useful to have this Balanced Scorecard to report on the state of my golf experience and on each measure by taking all the data tracked from all the rounds of golf played.

Note that in Table 1, your scorecard may have additional measures in a perspective, thus the blank rows. In an automated tool, it is beneficial to have links to the definitions of the metrics, their data charts, and the actual data for the metrics. Also, the frequency of reporting can be whatever is needed to be effective; it does not have to be the same for all measures. Some could be annual, some quarterly, and others monthly.

The status for each item under the four perspectives is determined by comparing the actual results against specific targets. This is how the green, yellow, and red status results are determined. Setting appropriate targets, or goals, is an important requirement. Note that the targets need to be appropriate! Targets help in understanding how the measure is performing in respect to its internal goals and strategies. If you want something like *stretch* objectives, then I would suggest creating a second status.

As you can see, not all the measures in the Internal Business Process Perspective are *on the green*. Some are *in the sand* (yellow status) while others are *out of bounds* (red status). These results matched my game at one time. Using my previously discussed approach, I would have tried to do something in each of these areas to fix my game. However, having data that I can analyze for trends and tendencies can prove quite useful. The data could actually be showing me that the results of the other processes are linked to *driving accuracy*. Perhaps all that is needed is to work on, and improve, the driving accuracy. Then, all the others may

Table 1: *Sample Balanced Scorecard Using Golf Metrics*

Financial Perspective	Status	Date
Average Cost per Round of Golf	GREEN	August
Number of Golf Rounds per Month	YELLOW	August
Monthly Practice and Learning Cost	GREEN	August
Internal Business Process Perspective	Status	Date
Average Score	YELLOW	August
Sand Saves	RED	August
Driving Distance	YELLOW	August
Driving Accuracy	RED	August
Greens in Regulation	YELLOW	August
Putts per Greens in Regulation	GREEN	August
Penalty Strokes per Round	YELLOW	August
Customer Perspective	Status	Date
Golf Buddies' Satisfaction	GREEN	August
Golf Team Satisfaction	GREEN	August
Innovation and Learning Perspective	Status	Date
Number of Lessons per Month	GREEN	August
Hours per Month Practicing	GREEN	August
Number of New Tips Learned per Month	GREEN	August

GREEN: On the Green    YELLOW: In the Sand    RED: Out of Bounds

inherit better results. I would not be able to determine this if I did not have all the historical data for analysis. This then eliminates any perception that may have resulted in inaccurate and wasted actions.

Another thing to consider is that all the metrics in green status in the Financial Perspective and Innovation and Learning Perspective could be indicating something, too. You may remember that I did not want to increase my financial obligation. But, something the overall metrics are showing is that maybe I needed to reconsider this. Perhaps putting more into lessons and playing more would help bring the process metrics into better shape.

Basically, this demonstrates that there are many variables we need to consider, and that many factors come into play in determining what options can be taken to address improvement. Many people generally look at measures in isolation. The whole picture is not always taken into consideration. But measurement, in isolation, is taking a chance that the results will even be realized. Would you want just one of the subjects in your performance appraisal used? If it is one that you did well in, well, that would be great! But, what if it is a subject you need improving in? And, what if your job or next pay raise was based on it?

As alluded to in Capers Jones' overview on the expanding roles of function point metrics [3], different metrics are appropriate for different companies. We cannot all use the same metrics. We have to evaluate our strategies and then determine what metrics are needed. And, we need to determine what measures work best together to represent a complete picture.

## Business, Communication, and Measurement

The business areas of our companies understand measurement. They will do internal and external evaluations and comparisons as a way of measuring and understanding themselves, their products, their competition, and their competitors' products. They will determine the differences and translate their findings into improvements in efficiency and effectiveness to help gain market share.

In turn, the business wants to see an efficient and effective Information Services (IS) division. When a competitor comes out with a new product, our business needs to be responsive to market changes. The IS division, as a service provider to the business areas and company, needs to be accountable and responsive so that these needs can be quickly achieved.

The division needs to be able to com-

municate in a value-added way with the business. Clarified terms and applications of those terms is a good start. A measurement program can supplement and enhance communication, not only with the business, but also within the division. It is important to ensure consistency within each division and across the organization to ensure the measures contain the same kinds of data so that we can have an *apples-to-apples* comparison and roll up to a multi-division strategic view of all the data.

To be effective in our communications, we need to measure and report actual performance. Do not make things up. Be honest. We need to demonstrate to business management that the IS division is managed with a fact-based approach. The joint evaluation of performance trends versus established goals or targets is an objective and non-emotional way to evaluate and communicate.

Measurement is key and it needs to be relative. It adds meaning and value when looked at on the whole and not individually. It must supply useful information for decision-making. Without measurement, how will we ever know if we are improving our processes and deliverable?

You may want to consider using multiple scorecards. For example, one for development, one for support, one for project management, and one for infrastructure support.

The Balanced Scorecard complements financial measures of past performance with measures of the drivers of future performance, say Kaplan and Norton. Of course, the old dictum still holds overall: You cannot control what you cannot measure. Thus the Balanced Scorecard was a new concept mainly designed to translate a company's vision and actions into a consistent set of measures. [4]

Effective measurement provides key learning opportunities that can be used in our efforts toward continual improvement. We can use the findings to identify successful practices and build on them. We can eliminate unsuccessful practices and improve those that just are not working the way they were intended. A better understanding and appreciation of other divisions can also be achieved as the development of the metrics and their required data are worked through, reported on, and acted on.

## Measurement Lessons Learned

The strategies supporting the mission and

vision need to be considered to gain an understanding of what is needed to perform the measurements. This will help in determining the data required to fulfill the measurements.

There are many sources of data when you are dealing with a large number of metrics. Some of the sources include accounting, projects, function point analysis, and surveys. Some data such as function points are not used by themselves for any one measure but are a component of several measures. Other data often used with function points include cost, full-time-equivalent effort, elapsed weeks, and defects.

Ensure the metric definitions are complete. Fully express each definition, including the required data source(s), desired trends, and the rationale to ensure understanding. Even with complete definitions, the data source(s) and formula(s) may change from the original understanding to achieve the definitions' rationale as the metric is developed. Involve the people needed for providing and using the data early in the process to get buy-in. This greatly reduces the time required to *sell* the metrics.

Over time, the current set of metrics may no longer meet the needs. All the different metrics that make up a scorecard need to be monitored and adjusted as strategic plans change. The measurements need to be current and useful. More, or different, metrics may be needed. Therefore, a regular evaluation of the metrics is required.

Data from outside the organization, known as industry benchmarks, can be used to gain an understanding of the performance in respect to other companies in the industry. This data needs to be similar to your own data to ensure an *apples-to-apples* comparison. There are different vendors that have data for this use. They need to be evaluated to determine which one will be an appropriate source of data for your needs.

## So, Who Is No. 1?

Like in golf and its manufacturers and players, the IS division can realize improvements and higher satisfaction both internally and with the customer. The scorecard facilitates communication within the division and with the business organization by providing balanced measures with supporting data.

In the July 2003 issue of *Golf Magazine*, Greg Norman commented about how the business world fascinates him. He said:

That is a wonderful thing that golf

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has given me. What amazes me is that some of these businessmen have told me, 'Greg, you know what, we're great in our business, but you have something 99.9 percent of the people in this world don't have. You know what it's like to be number one.' They may be great CEOs, but they don't know if they're the best CEO because it can't be measured. [5]

The Balanced Scorecard can be a very useful tool ... when properly used! ♦

## References

1. Churchill, Winston. [QuoteDB.com](http://QuoteDB.com) 11 May 2005 <[www.quotedb.com/quotes/2455](http://www.quotedb.com/quotes/2455)>.
2. [BetterManagement.com](http://BetterManagement.com). SAS Institute Inc. 11 May 2005 <[www.bettermanagement.com](http://www.bettermanagement.com)>.
3. International Function Point Users Group (IFPUG). [IT Measurement: Practical Advice from the Experts](http://IT-Measurement-Practical-Advice-from-the-Experts). 1st ed. Addison-Wesley Professional, 17 Apr. 2002: 18.

4. IFPUG, 477.

5. Frank, James A. "Golf Talk with Peter Kessler." [Golf Magazine](http://Golf-Magazine) July 2003 <[www.golfonline.com/golfonline/features/features/article/0,17742,486703,00.html](http://www.golfonline.com/golfonline/features/features/article/0,17742,486703,00.html)>.

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